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1990 RESIDENTIAL END USE SURVEY

JUNE 25, 1991

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91-06518/

Canadian Cataloguing in Publication Data
Paull, Catherine.
1990 residential end use survey

Prepared for B.C. Hydro, West Kootenay Power, B.C. Gas.
ISBN 0-7726-1406-7

1. Dwellings - British Columbia - Energy consumption. I. Campbell, Bruce A. (Bruce Alan) II. B.C. Hydro. III. West Kootenay Power and Light Co. IV. B.C. Gas. V. Title.

TJ163.5.D86P38 1991 333.79'6313'09711 C91-092272-1

EXECUTIVE SUMMARY

Method

A mail questionnaire was sent to 10,878 BC Hydro customers and 2,491 West Kootenay Power customers on October 26, 1990. Approximately 50 percent of the questionnaires were returned, 5218 from BC Hydro customers and 1270 from West Kootenay customers, as well as 121 whose geographic location could not be determined. In addition, there are 3962 respondents (a subset of the above totals) who have natural gas service available to them. The sample is weighted to assure correct representation by geography, based on BC Hydro's billing system.

The results presented in this summary, as well as in the report as a whole, are for BC Hydro customers, with West Kootenay Power results being reported separately.

Residence

Sixty-three percent of the sample live in single family homes, while 20 percent live in apartments. Seven percent live in townhouses or rowhouses, five percent in mobile homes and the rest in other types of structure. The average size of a British Columbia residence is 1811 square feet.

Fourteen percent of the housing stock in the province is more than forty years old, while thirteen percent is five years old or less. Housing stock is somewhat newer in the Lower Mainland and among gas-available customers, and somewhat older in the Southern Interior.

Seventy-six percent of the respondents in this survey own their own homes. This is a very high rate of ownership, by North American standards, and suggests that demand-side management programs such as Power Smart, which require capital investment, will find a more receptive audience in British Columbia than might be true elsewhere.

The average amount of insulation in British Columbia dwellings varies by area, but even in the North it tends to be minimal. Across the BC Hydro service area, four percent of dwellings have no wall insulation and 69 percent have only R12 in the walls. Three percent have no insulation in the ceilings and 19 percent have only R12. Sixty-five percent have no floor insulation and another 17 percent have R12 only. Energy conservation will be realized as home-owners upgrade their insulation (five percent say they are planning to do so and another 11 percent say they are willing to do so). In addition, the older, less well-insulated housing stock will progressively be replaced by new, better-insulated structures.

Space Heating

Fifty-six percent of the BC Hydro respondents said that piped gas service of one kind or another is available where they live. Twenty-one percent believed that no natural gas service is available, while 19 percent either did not know or did not answer the question. Sixty-five percent of those not living on Vancouver Island reported that natural gas service is available to their residences.

Natural gas is the most popular fuel used for space heating, being reported by 47 percent of the BC Hydro customers and by about 60 percent of those not living on Vancouver Island. Electricity follows as the space heating fuel for 26 percent of BC Hydro customers' homes (22 percent of those who do not live on Vancouver Island). Oil is the third most popular home heating fuel, claimed by 11 percent of BC Hydro customers and 35 percent of those who do live on Vancouver Island.

Lower Mainland residents are the most likely among the geographic groups to use natural gas for space heating (62 percent), while 76 percent of those across the province with natural gas service available use this fuel for space heating.

The rate of change in home heating fuel has obvious implications for fuel substitution. Four percent of the respondents report changing home heating fuel in the previous two years. Forty-two percent of these switched from oil, 18 percent from wood and 13 percent from electricity. Forty-nine percent of the switchers moved to natural gas, 26 percent to electricity and the balance to other fuels. This means that across the BC Hydro service area, 2.1 percent of households which did not previously heat with natural gas, have begun using that fuel in the two years preceding the survey, while 1.2 percent which did not previously use electricity, switched to that fuel.

We also note that the rate of conversion of home heating fuels reported for the two years prior to the survey will apparently hold up for the next two years, as five percent of the sample reports plans to convert during that period. In this case, four percent are planning a switch to natural gas, and just 0.2 percent report a plan to switch to electricity. We conjecture that the major reason for the preference for natural gas in the future as compared to the past is that substantial numbers of Vancouver Island residents report that they intend to switch to natural gas, apparently in anticipation of the supply reaching them during that time.

Of those planning to switch home heating fuels, 37 percent presently heat with oil, 32 percent heat with electricity, 20 percent with wood and 11 percent with other fuels.

It is clear that in the report of both past and planned changes in home heating fuels, natural gas realizes a net gain at the expense of all other fuels, since home-owners almost never switch away from this fuel.

Nearly all respondents who answered the question felt that both electricity and natural gas are "reasonably" or "completely" safe for home heating.

We have seen in the previous paragraphs that most new home heating systems are either electric or natural gas-fuelled, with the bulk of the new electric installations being made either on Vancouver Island or in multiple-unit residences on the mainland. The following factors are seen to be influential guides to the choice of home heating fuel by prospective home-owners (listed in order of preference):

Fuel price
Dependability of fuel supply
Comfort
Environmental impact
Initial cost of equipment

The fact that initial cost was ranked last probably arises from the fact that the question was asked in the context of buying a new home, where the cost of the heating system is included in the overall cost of the house.

Water Heating

Forty-eight percent of the BC Hydro customers in the sample report using electricity for hot water heating. This rises to 83 percent of Vancouver Island residents, as compared to 39 percent of those residing on the mainland.

Forty-six percent of the sample report using natural gas to heat their water. This is one percent among Island residents and 58 percent of those living on the mainland. Residents of the Lower Mainland use natural gas in 62 percent of the cases, while 72 percent of those with natural gas available to them use this fuel to heat their water.

With respect to fuel substitution in the area of water heating, four percent of the respondents in the BC Hydro service area said they planned to convert to a different water heating fuel during the next two years. Eighty-eight percent of these planned switches will be to natural gas. Most of the switchers (83 percent) will be switching from electricity. Again, we observe that the majority of those who plan a change and who do not presently have natural gas service still say they will switch to natural gas, presumably in anticipation of the provision of this service over the next two years.

Hot water consumption was measured in terms of the following averages:

Average dishwasher loads per week:	2.4
Average loads of laundry per week:	4.3
Average baths per week:	4.2
Average showers per week:	8.4

Appliances

Capture rates for 34 appliances were collected in the survey. Rates for some of the more common appliances are:

Television	92.4%
Electric range	83.5%
Clothes washer	82.7%
Electric clothes dryer	77.3%
Automatic refrigerator	76.5%
Microwave	73.4%
VCR	65.1%
Hot water heater	59.5%
Dishwasher	54.4%
Chest freezer	52.4%
Propane BBQ	45.8%
Gas lawnmower	42.1%
Manual defrost refrigerator	31.8%
Electric lawnmower	20.8%
Personal computer	20.3%

Conservation

Respondents were queried about the actions they take to conserve energy. This list covers a number of habitual behaviours around the home. Actions taken most frequently include:

- Washing full loads of dishes
- Turning off lights when rooms not in use
- Turning back thermostats or using setback thermostats at bedtime
- Turning back thermostats or using setback thermostats when no one is home
- Washing only full loads of laundry

Those things respondents were less willing to do include:

Washing and rinsing clothes in cold water
Not using the dry cycle in the dishwasher

Servicing the heating system regularly
Using less or no heat in unused rooms
Washing clothes in warm water with a cold water rinse

From the perspective of the Power Smart program, efforts to alter behaviour should probably be directed at the items in the second list. Respondents almost all report that they "always" or "usually" take the first five actions already, and further encouragement is not likely to bring about much increase in frequency. On the other hand, the second list of actions are done either "usually" or "occasionally" on average and there is, therefore, an opportunity to increase the incidence of these behaviours.

A second set of questions was asked about what improvements the respondent is willing to undertake to conserve energy. These actions involve either one-time actions, or capital investments.

Our respondents were most likely to have done the following things:

Install weather-stripping or caulking
Use a low-flow shower head or restricter
Install energy-efficient or low-wattage lighting
Improve home insulation in walls or attic
Purchase energy efficient appliances
Install an insulated steel door and/or an aluminum storm door
Install double glazed windows
Install glass fireplace doors

On the other hand, those actions most likely to be planned or which respondents are most likely to be willing to take include:

Participate in energy-efficient appliance rebate program
Purchase energy-efficient appliances
Install energy-efficient or low-wattage lighting
Have a home energy audit
Install a hot water heater blanket
Install time-controlled thermostat
Use a low-flow shower head or flow restricter

Finally, the following actions are least likely either to have been taken or to be taken:

Install storm windows
Install triple glazed windows

We infer from the above lists that the Power Smart program has had a considerable effect. We find not only that the appliance rebate program has already attracted a considerable number of participants, but also that many potential users have been created, not only for the appliance purchase program but also for energy-efficient lighting.

Perhaps most significant in these lists, beyond the success and potential of Power Smart, is the amount of willingness demonstrated to participate in a home energy audit. Since this is the gateway to informing the home-owner about what can be done to conserve energy, it might be most effective for BC Hydro to put a major effort into providing such audits, and then in offering the services indicated by the audits as a follow-up. In addition to energy-efficient appliances and lighting, these should include installing time-set thermostats and low-flow shower heads and flow restricters. Weather stripping, improving insulation in walls and ceilings and installing insulated doors are also popular improvements. The potential of these last three products is limited only by the fact that large numbers of home-owners have already carried out the improvements.

The above results show fairly clearly that, on average, the sorts of actions the respondents are willing to take involve relatively minor and inexpensive things. As the action to conserve energy increases in difficulty and expense, respondents are more likely to indicate that they would not participate.

This perspective is reinforced by the answers to a question about the major reasons for taking action to conserve energy. The leading response was "to save money," given by 39 percent of the BC Hydro customers. Twenty-two percent said "it is the sensible thing to do" which unfortunately does not tell us a great deal about motives. Protecting the environment, benefitting BC generally or benefitting future generations were responses chosen by small numbers of respondents. We are left with the sense that a dollars and cents calculation lies at the base of most energy-conservation behaviour.

A further perspective on this problem is illustrated by the final question, asking how much a person is willing to spend on his or her home heating system in order to save $100 per year in fuel costs. Of those who answered the question, 40 percent would spend $100 or less and of these, 21 percent said they would pay nothing at all for such a savings. On the other end of the scale, 34 percent said they would be willing to pay $500 or more to realize a savings of $100 per year.

Assuming an improvement to a home heating system will last at least ten years and neglecting the time value of money, it might be rational to be willing to spend $1000 to secure the savings of $100 per year. The fact that only 10 percent of the sample were willing to spend $1000 or more gives a second illustration of the difficulty of instituting energy saving behaviour which requires the expenditure of significant amounts of money.

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I. INTRODUCTION

In order to provide baseline information for the estimation and projection of consumption of electricity and natural gas in the Province of British Columbia, B.C. Hydro, B.C. Gas, West Kootenay Power, ICG Utilities (British Columbia) Ltd. and the B.C. Ministry of Energy, Mines and Petroleum Resources require periodic surveys of the residential population. This document reports the findings of the most recent survey, the 1990 Residential End Use Survey, conducted by Campbell Goodell Consultants Ltd.

The major objectives of this project were:

* To estimate saturation of specific end uses;

* To identify new market opportunities as well as opportunities for fuel substitution;

* To estimate the sizes of customer segments developed in B.C. Hydro's internal quantitative studies and identify variables for forecasting changes in these segments; and

* To provide data for evaluating Power Smart Programs.

II. METHODOLOGY

Campbell Goodell Consultants conducted a mail survey to collect information about residential energy use for B.C. Hydro, B.C. Gas, West Kootenay Power, ICG Utilities (British Columbia) Ltd. and the Ministry of Energy, Mines and Petroleum Resources.

The method proposed by Campbell Goodell Consultants to conduct mail surveys is the Dillman method. The "total design method" for direct mail surveys as described by Dillman includes the following elements:

> Three mailings to the respondents, a first questionnaire, a reminder card sent to all respondents one week later and a second questionnaire sent to those who have not responded after three weeks.
>
> All mailings sent in desk-top publishing format.
>
> All material personalized, with respondent name and address appearing on the questionnaire and a salutation using the respondent's name.
>
> Carefully-worded cover letters on all communications.
>
> A postage-paid return envelope supplied.
>
> Clear identification of the sponsor of the research, both through the use of the sponsors' logos and a signature of an officer of the company on correspondence.

B.C. Hydro provided Campbell Goodell Consultants with a list of 13,369 customers (2491 of these were West Kootenay Power customers). A questionnaire, a personalized covering letter, and a postage-paid return envelope were mailed out to all 13,369 customers on October 26, 1990.

The questionnaire, covering letter and address label on the envelope all contained a sequence number that could be matched to the customer. When the questionnaires were returned, the database was updated to indicate which customers had completed a questionnaire in order to avoid sending an additional questionnaire or reminder cards.

A reminder card was sent out on November 2, 1990 to all customers in the database reminding them to complete the survey, or asking them to call Campbell Goodell Consultants if they had misplaced their questionnaire.

At this point, the decision was made to eliminate the second questionnaire, and a second reminder card was sent in its place to all customers who had not as yet returned a questionnaire.

The second reminder card was sent out November 21, 1990. Again, customers were reminded to complete the questionnaire or to call Campbell Goodell Consultants to receive another one.

We sent out approximately 100 questionnaires to customers calling in requesting an additional one.

The return rate was 50%. By the cut off date of December 21, 1990, there were 6665 questionnaires returned to us - 5940 Wave 1 questionnaires, and 669 Wave 2 questionnaires. The cut-off date for Wave 1 was November 23, 1990. All questionnaires returned after this date were considered Wave 2.

Approximately one percent of these questionnaires were "unusable" - such as undeliverable questionnaires or refusals. As a result we received 6609 "usable" questionnaires - 5218 from B.C. Hydro customers, 1270 from West Kootenay Power customers, and 121 that were unidentifiable because their sequence numbers had been removed.

The weighted distribution for the BC Hydro customer questionnaires received according to region is detailed in the table below:

Region

	BCH TOTAL (5218)
Lower Mainland	59%
Northern Division	10
Southern Interior	10
Vancouver Island	21

Most tabular displays in this report are divided into seven parts. The left-most part contains all BC Hydro customers. The second through fifth describe the four BC Hydro service areas: Lower Mainland, Northern Division, Southern Interior and Vancouver Island. The sixth part of the table contains all West Kootenay customers. Finally, all natural gas-available respondents form the seventh part of the table. These are defined as respondents who said they had access to natural gas, or used natural gas either for space heating (main or supplementary fuel), or for water heating or both.

Unless specifically noted, tables contain only the 5218 BC Hydro respondents, or subsets thereof.

In the tables, the column labels refer to:

BCH TOTAL	=	All BC Hydro customers
LM	=	Lower Mainland
ND	=	Northern Division
SI	=	Southern Interior
VI	=	Vancouver Island
WK	=	West Kootenay Power Customer
GA	=	Respondents with natural gas service available

An analysis of responses subdivided by wave indicates that there are significant differences in the response patterns in many cases. While this is not surprising, given the very large sample sizes, these differences have implications with respect to the possible presence of non-response bias. For example, because those who responded late tend to be younger, to have lower incomes and educational attainment, we might infer that all non-respondents have lower socioeconomic status than do the Wave 1 respondents who make up the bulk of our sample.

Other differences between Wave 1 and Wave 2 include:

Wave 1 are more likely to own; wave 2 are more likely to rent.

Wave 1 are more likely to report that natural gas service is available.

Wave 1 are more likely to heat with natural gas; Wave 2 are more likely to heat with oil or wood.

Wave 1 are more likely to believe that electricity and natural gas are safe for home heating; Wave 2 are more likely to believe that wood is safe.

Wave 1 are more likely to use natural gas to heat water; Wave 2 are more likely to use electricity.

Wave 1 and 2 do not differ appreciably in their conservation behaviors.

No corrections have been made to the data, based on the differences which exist between Wave 1 and Wave 2 respondents.

III. RESULTS

A. RESIDENCE

The initial section of the questionnaire asked specific questions about the respondent's residence. It included questions about the type of residence, the year the residence was built, the number of years the respondent has lived in the residence, the floor area and insulation.

The first table displays the types of residences occupied by British Columbians in 1990.

Table 1. Type of Residence

1a. Is this residence a single family house, duplex, row townhouse, apartment suite, mobile home, or other?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Single family house (detached)	62%	59%	65%	69%	66%	71%	71%
Duplex (2 units attached)	3	3	5	3	2	3	4
Row or townhouse (3 or more units)	7	8	4	6	5	5	6
Apartment suite	20	24	9	7	18	11	12
Mobile home	5	2	13	12	6	6	4
Other	2	2	1	1	2	2	1
Multiple answer	*	*	1	*	*	*	*
No response	1	2	2	2	1	2	2
	100%	100%	100%	100%	100%	100%	100%

Clearly the most common type of residence in the province is the single-family (detached) house. Such structures are occupied by nearly two thirds of the population. Nearly thirty percent of the population lives in townhouses or apartment suites, and five percent live in mobile homes.

In the 1986 Census, 62.5 percent of British Columbians lived in single-family detached homes.

Table 2. Year Residence was Built

1b. When was this residence built?

	BCH TOTAL (5218)	LM (1395)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Before 1950	13%	14%	5%	13%	17%	16%	15%
1950 - 1975	39	37	46	39	39	33	41
1976 - 1985	27	25	32	32	28	30	25
1986 - 1988	8	10	4	6	6	7	8
1989 or after	4	5	2	2	4	5	5
Don't know	6	5	8	6	5	6	3
No response	3	4	3	2	1	3	3
	100%	100%	100%	100%	100%	100%	100%

Median age: 15.75 years

About one-eighth of the housing stock in the province is more than forty years old, while about another one-eigth is five years old or newer. Housing stock is somewhat newer in the Lower Mainland and among gas available respondents, and somewhat older in the Southern interior.

Table 3. Principal Residence

1c. Is this your principal residence?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Yes	95%	95%	93%	94	97%	92%	95%
No	2	2	3	3	2	5	2
No response	3	3	4	3	1	3	3
	100%	100%	100%	100%	100%	100%	100%

Ninety-five percent of the respondents said the residence they were being questioned about was their principal residence. Two percent were either second homes or rental properties.

Table 4. Number of Years Respondents Have Lived in This Residence

1d. How many years have you lived in this residence? (Categorized responses)

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Under two years	32%	33%	31%	29%	30%	30%	29%
Three to five years	21	21	21	18	21	19	19
Six to twelve years	19	17	23	22	21	23	20
More than twelve years	25	25	22	27	26	24	28
No response	3	4	3	4	2	4	4
	100%	100%	100%	100%	100%	100%	100%
Mean	9.0	9.2	8.0	9.3	8.8	9.4	10.0

Respondents have lived in the residence for an average of 9 years. A quarter of the population is quite stable, having lived in their current residence for more than 12 years. On the other hand, a third of the population has moved during the past two years. Mobility is somewhat greater in the North and somewhat lower among natural gas available respondents.

Table 5. Residence is Owned or Rented

1e. Do you own or rent this residence?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Rent	24%	25%	20%	19%	24%	16%	15%
Own	74	73	77	78	75	81	83
No response	2	2	3	3	1	3	2
	100%	100%	100%	100%	100%	100%	100%

Three quarters of the respondents owned the residence about which they were reporting in the questionnaire, while a quarter of respondents were renters. Gas available respondents are more likely to own their own homes (matching their lesser mobility seen in Table 4), while renting is more prevalent in the Lower Mainland and on Vancouver Island.

Respondents who rented their residence were then asked if heat, hot water and natural gas fireplace were included in the rent or maintenance fee.

Table 6. Utilities Included in Rent

1e. Are the following included in your rent or maintenance fee?: BASE = Renters only (Q1e = 1)

HEAT	BCH TOTAL (1245)	LM (781)	ND (104)	SI (102)	VI (259)	WK (207)	GA (609)
Yes	46%	55%	25%	20%	38%	14%	45%
No	51	43	68	72	57	80	52
No response	3	2	7	8	5	6	3
	100%	100%	100%	100%	100%	100%	100%

HOT WATER	BCH TOTAL (1245)	LM (781)	ND (104)	SI (102)	VI (259)	WK (207)	GA (609)
Yes	59%	69%	32%	30%	51%	44%	56%
No	38	29	63	64	46	53	41
No response	3	2	5	6	3	3	3
	100%	100%	100%	100%	100%	100%	100%

NATURAL GAS FOR FIREPLACE	BCH TOTAL (1245)	LM (781)	ND (104)	SI (102)	VI (259)	WK (207)	GA (609)
Yes	2%	1%	3%	3%	2%	1%	2%
No	14	12	19	19	15	20	16
Have no fireplace	77	80	72	68	74	69	74
No response	7	7	6	10	9	10	8
	100%	100%	100%	100%	100%	100%	100%

There were wide variations among the sub-groups regarding inclusion of energy costs in the rent. Such inclusion is a relatively rare exception among West Kootenay customers so far as home heating is concerned, while over half of the tenants in the Lower Mainland say heat is included in their rent. The inclusion of hot water heating is least common in the North and the Southern Interior, while Lower Mainland tenants are again most likely to have their rent include this expense.

Basements are least common on Vancouver Island and most common in the Southern Interior, which has the oldest housing stock. Gas available respondents are also relatively more likely to have basements.

Table 7. Basement Area

1f. Is the basement area of this residence finished?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
No Basement	39%	39%	34%	28%	45%	33%	31%
Unfinished	9	8	12	13	9	13	10
Partly finished	22	21	27	27	21	26	25
Fully finished	24	25	23	29	20	24	29
No response	6	7	4	3	5	4	5
	100%	100%	100%	100%	100%	100%	100%

Table 8 shows the distribution of total floor area of the respondents' residence, including the basement and/or unfinished areas, in square feet.

Table 8. Total Floor Area of Residence

1g. What is the total floor area of this residence, including basement and/or unfinished areas, if any? (Categorized responses in square feet)

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Under 1000	17%	19%	17%	14%	14%	13%	15%
1000-1300	13	11	19	16	14	17	13
1301-1850	16	14	13	18	19	17	16
1851-2500	22	22	22	23	23	24	26
Over 2500	15	16	13	16	12	15	18
Non valid response	1	1	0	0	1	1	1
No response	16	17	16	13	17	13	11
	100%	100%	100%	100%	100%	100%	100%
Mean square feet	1811	1839	1716	1852	1756	1828	1911

The total floor area of the residence, including the basement and/or any unfinished areas, is an average of 1811 square feet.

The next questions concern the amount of insulation in different parts of the residence, in particular, the walls, ceiling, floors and the basement. Respondents were asked to answer in terms of R-factor or inches of fiberglass insulation.

In this series of questions, over 50 percent of respondents typically failed to answer one or more items. We assume that this was due to the fact that they did not know how much insulation they had. We therefore present the responses based only on those who answered the question.

Table 9. Amount of Insulation in The Walls of the Residence

1h. How much insulation do you have in different parts of this residence?:

WALLS	BCH TOTAL (2409)	LM (1282)	ND (278)	SI (328)	VI (522)	WK (712)	GA (2062)
R12 (3.5")	69%	72%	68%	64%	64%	59%	69%
R20 (6")	23	20	25	32	25	32	23
R28 (8.5")	3	3	2	1	3	3	3
R40+ (12.5" or more)	1	1	1	1	1	2	1
No insulation	4	4	4	2	7	4	4
	100%	100%	100%	100%	100%	100%	100%

More than two-thirds of respondents who gave a response, have three and a half inches of insulation in the walls of their residence. Nearly one quarter have six inches of insulation in their walls. Only four percent of residential structures have no wall insulation.

Table 10. Amount of Insulation in the Ceiling of the Residence

1h. How much insulation do you have in different parts of this residence?:

CEILING	BCH TOTAL (2612)	LM (1393)	ND (296)	SI (326)	VI (597)	WK (741)	GA (2226)
R12 (3.5")	19%	20%	20%	14%	18%	16%	18%
R20 (6")	40	40	39	44	39	37	39
R28 (8.5")	24	24	19	20	26	27	25
R40+ (12.5" or more)	14	12	19	21	15	19	15
No insulation	3	4	3	1	2	1	3
	100%	100%	100%	100%	100%	100%	100%

Two in five respondents who gave an answer, have six inches of insulation in the ceiling of their residence. One in five respondents have three and a half inches of insulation in their ceiling, and a further one in four have eight and a half inches of insulation. Just three percent report no ceiling insulation.

Table 11. Amount of Insulation in the Floors of the Residence

1h. How much insulation do you have in different parts of this residence?:

FLOORS	BCH TOTAL (1908)	LM (984)	ND (232)	SI (247)	VI (445)	WK (539)	GA (1568)
R12 (3.5")	17%	16%	19%	12%	21%	15%	16%
R20 (6")	14	11	15	15	18	12	10
R28 (8.5")	3	2	3	2	7	5	2
R40+ (12.5" or more)	1	1	1	3	2	2	2
No insulation	65	70	62	68	52	66	70
	100%	100%	100%	100%	100%	100%	100%

Nearly two-thirds of the respondents to this question report having no floor insulation. Slightly less than a third have at most six inches of floor insulation in their residences.

Table 12. Amount of Insulation in the Basement of the Residence

1h. How much insulation do you have in different parts of this residence?:

BASEMENT	BCH TOTAL (1464)	LM (742)	ND (181)	SI (228)	VI (313)	WK (448)	GA (1322)
R12 (3.5")	51%	57%	46%	38%	48%	42%	51%
R20 (6")	20	14	31	21	23	23	18
R28 (8.5")	3	4	1	3	3	3	3
R40+ (12.5" or more)	1	1	*	3	1	1	1
No insulation	25	24	22	35	25	31	27
	100%	100%	100%	100%	100%	100%	100%

Of the respondents who have basements, one-half have three and a half inches of insulation in the basement of their residence, and a fifth have six inches of insulation.

A fifth of respondents in the total sample lived in apartment buildings. These respondents were asked to specify the number of floors the apartment building had.

Table 13. Number of Floors in the Building, Asked of Apartment Dwellers Only

1i. How many floors are there in this building? (Categorized responses) BASE = Apartment dwellers only: Q1a = 4

	BCH TOTAL (1043)	LM (759)	ND (47)	SI (40)	VI (198)	WK (140)	GA (478)
Two stories or less	11%	11%	11%	28%	10%	21%	11%
Three stories	46	49	69	50	24	43	52
Four to five stories	20	12	16	12	52	31	11
More than five stories	19	23	2	7	13	3	25
No response	4	5	2	3	1	2	1
	100%	100%	100%	100%	100%	100%	100%
Mean	5.6	6.1	3.1	3.3	4.6	3.3	6.3

There was an average of 5.6 floors in the apartment buildings. Apartment buildings in the Lower Mainland are, on average, about twice as tall as apartment buildings in the Northern Division and in the Southern Interior.

A fifth of apartment dwellers (three percent of the total sample) lives in apartment buildings with more than five stories. These respondents are found primarily in the Lower Mainland.

In British Columbia as a whole, 5.6 percent of households are apartment buildings of five or more stories. This is matched by 5.8 percent of the present sample, if we assume that half of those in the "four to five" stories category in Table 13 live in five-storey buildings.

* * * * *

B. SPACE HEATING

This section of the questionnaire refers to fuels available to and used in residences. Respondents were asked to identify space heating methods used in the home. They were also asked about fuel preferences, safety of fuels, and factors influencing their choice of fuel.

The first question of this section determined if natural gas or piped propane service was available to the residence.

Table 14. Availability of Natural Gas or Piped Propane Service

2a. Is natural gas or piped propane service available to this residence and to other residences on your street?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Yes, natural gas is available	52%	65%	66%	66%	2%	65%	90%
Yes, piped propane service is available	2	1	1	3	4	0	0
Yes, gas service is available don't know which	2	2	1	1	2	1	1
No, neither service is available	21	7	21	18	62	16	1
I don't know whether service is available	15	17	5	7	21	9	3
Multiple answer	4	4	2	1	3	4	3
No response	4	4	4	4	6	5	2
	100%	100%	100%	100%	100%	100%	100%

Fifty-six percent of the BC Hydro respondents said that piped gas service of one kind or another is available where they live. Twenty-one percent believed that no natural gas service is available, while 15 percent were not sure one way or the other. Of course, Vancouver Island is far below the average with only two percent of respondents indicating natural gas service is available to them. West Kootenay customers have about the same access to natural gas as do BC Hydro customers who do not live on Vancouver Island.

Respondents were then asked to indicate the main fuel used in the heating of their residence.

Table 15. Main Fuel Used to Heat the Residence

2b. What is the main fuel used to heat this residence?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Electricity	26%	23%	17%	19%	42%	41%	13%
Natural Gas	47	62	52	54	1	44	76
Piped Propane	1	*	1	*	1	0	0
Bottled Propane	1	*	1	1	1	0	*
Oil	11	5	8	6	35	3	3
Wood	6	2	15	12	12	7	2
Other	1	1	1	*	1	*	*
Multiple answer	5	3	4	7	6	4	3
No response	2	4	1	1	1	1	1
	100%	100%	100%	100%	100%	100%	100%

Natural gas was ranked first, electricity was second and oil was ranked third by respondents in the total BC Hydro sample as the main fuel to heat their residence. However, looking across the four regions, on Vancouver Island we see electricity ranked first, followed by oil and, thirdly, wood as the primary sources of heat. There is also a relatively high reliance on electricity in the West Kootenay area, while 76 percent of natural gas available respondents heat their homes with natural gas.

Continuing on from this question, respondents were asked to indicate all other fuels, besides the main one, that are used for at least 10 percent of the heating in their residence.

Table 16. Other Fuels Used for at Least Ten Percent of the Heating of the Residence

2c. Please check all other fuels, besides the main one, that are used for at least 10 percent of the heating of this residence. (Multiple responses)

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Electricity	19%	20%	18%	16%	18%	15%	21%
Wood	17	12	21	21	25	25	16
Natural Gas	3	4	2	3	*	3	5
Oil	3	1	4	5	6	1	1
Bottled Propane	1	*	2	1	1	*	*
Piped Propane	*	*	*	*	1	*	*
Other	1	1	1	*	1	1	1
No other fuel used	60%	65%	56%	58%	52%	57%	60%

Nearly half the total respondents did not answer this question, presumably because only one fuel was used to heat their homes. About a fifth of the sample said electricity is used for at least ten percent of the heating of their residence. Nearly seventeen percent use wood for at least ten percent of the heating and three percent use natural gas.

The next two questions asked the respondent to indicate, first, the main method used to heat the residence, and second, all methods used to heat the residence.

Table 17. Main Method Used to Heat the Residence

2d. Please check the main method used to heat this residence.

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Central forced air furnace	49%	51%	58%	58%	34%	51%	65%
Wired-in electric heater(baseboards)	21	19	17	15	35	29	12
Hot water heating system	14	19	5	5	9	4	13
Radiant cables	1	1	*	*	*	*	*
Portable electric heaters	*	*	*	*	1	*	*
Wood stove	5	1	12	11	11	6	2
Heat pump	1	*	*	1	2	2	*
Fireplace	1	1	1	*	*	*	1
Other	1	2	2	2	2	1	2
Multiple answer	4	3	3	6	3	5	4
No response	3	3	2	2	3	2	1
	100%	100%	100%	100%	100%	100%	100%

Seventy percent of the respondents used central forced air furnaces or wired-in electric heaters as the main method to heat their residence. Central forced air is the most common among gas available respondents, principally in the North and the Southern Interior, while baseboard heaters are found most frequently on Vancouver Island and in the West Kootenay area.

Table 18 shows the total penetration of primary and supplementary space heating methods.

Table 18. All Space Heating Methods Used in the Residence

2e. Please check all the space heating methods you use in this residence. (Check as many as apply.)

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Central forced air furnace	45%	47%	52%	51%	34%	46%	58%
Wired-in electric heater(baseboards)	29	26	26	23	44	38	21
Fireplace	28	31	18	21	27	25	32
Wood stove	16	9	29	26	27	23	13
Hot water heating system	14	19	8	5	9	5	13
Portable electric heaters	13	14	9	9	11	12	13
Other	2	2	3	3	4	2	2
Heat pump	*	*	*	1	2	2	1
Radiant cables	1	1	*	*	1	1	1
No response	10	10	10	14	9	8	8

While fireplaces and portable electric heaters are rarely used as the main method for home heating, they are frequently used as supplemental methods.

Table 19 shows the proportion of respondents who have changed the main fuel used to heat the residence in the past two years.

Table 19. Has the Main Fuel Used to Heat the Residence Changed in the Past Two Years?

2f. Have you changed the main fuel used to heat this residence in the past two years?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Yes	4%	3%	6%	6%	6%	4%	4%
No	92	92	92	91	91	94	94
No response	4	5	2	3	3	2	2
	100%	100%	100%	100%	100%	100%	100%

Most of the respondents had not changed the main fuel used to heat the residence in the past two years. Four percent of the respondents had changed fuel in the last two years, and they were asked what main fuel they had used to heat the residence before the change-over.

Table 20. Main Fuel Used to Heat the Residence Before the Change, Asked of Those Who Have Changed Fuels

2f. What main fuel was used to heat this residence before this change? BASE = All who changed fuels: Q2f = 1

Customers with gas service available

Main fuel switched from	TOTAL (150)	Main fuel switched to: Nat. Gas (116)	Elec. (15)	Other (12)
Oil	39%	45%	13%	33%
Wood	14	11	10	38
Electricity	12	15	*	2
Natural Gas	8	3	9	27
Bottled Propane	*	1	0	0
Piped Propane	*	*	0	0
Other	*	*	0	0
Multiple answer	20	16	68	0
No response	7	9	*	0
	100%	100%	100%	100%

Customers with no gas service available

Main fuel switched from	TOTAL (86)	Main fuel switched to: Nat. Gas (0)	Elec. (47)	Other (25)
Oil	49%	0%	51%	38%
Wood	26	0	32	26
Electricity	14	0	9	18
Natural Gas	5	0	3	10
Bottled Propane	2	0	3	0
Piped Propane	0	0	0	0
Other	1	0	1	0
Multiple answer	1	0	1	1
No response	2	0	0	7
	100%	100%	100%	100%

Among respondents with gas service available, two in five were previously using oil to heat their residence before they changed to the fuel they are using now. Wood and electricity were each used by about one in seven respondents.

Seventy-seven percent of respondents (116 of 150) with natural gas service available to them, switched to natural gas. Of those who switched to natural gas, 45 percent switched from oil, 15 percent from electricity, 11 percent from wood and 25 percent did not indicate what fuel they were switching from.

Ten percent of those with natural gas service available (15 of 150) switched to electricity. Most of these used more than one fuel previously.

Among customers with no gas service available, half were heating with oil prior to their switch, one-quarter with wood and one-seventh with electricity. Two-thirds of this group switched to electricity, half from oil and a third from wood.

Tables 21 and 22 present the turnover information for those who are planning a change in main space heating fuel over the next two years.

Table 21. Respondents Planning to Convert to Another Main Heating Fuel Within the Next Two Years

2g. Do you plan to convert this residence to another main heating fuel within the next two years?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Yes	5%	2%	6%	4%	12%	5%	2%
No	86	88	90	89	78	90	92
No response	9	10	4	7	10	5	6
	100%	100%	100%	100%	100%	100%	100%

Eighty-six percent of respondents indicated they were not planning to convert their residence to another main heating fuel within the next two years, while five percent said they were planning to convert. Note that 12 percent of Vancouver Island residents plan to switch, a possible indication of anticipation of the opening of the new natural gas pipeline.

This five percent were asked to indicate what main heating fuel they are planning to convert to.

Table 22. Main Fuel Respondents Are Planning to Convert To, Asked of Those Planning to Convert Within the Next Two Years

2g. What main fuel are you planning to convert to?
BASE = All who plan to convert: Q2g-a = 1

Customers with gas service available

Main fuel planning to switch to	Total (109)	Main fuel switched from: Elec. (25)	Oil (36)	Wood (19)	Other (23)
Natural Gas	81%	91%	89%	86%	47%
Wood	10	8	3	0	35
Piped Propane	3	*	7	6	0
Electricity	3	1	0	1	12
Oil	*	0	0	0	1
Bottled Propane	0	0	0	0	0
Other	1	*	1	0	4
Multiple answer	2	0	0	7	1
No response	0	0	0	0	0
	100%	100%	100%	100%	100%

Customers with no gas service available

Main fuel planning to switch to	Total (152)	Main fuel switched from: Elec. (54)	Oil (54)	Wood (30)	Other (4)
Natural Gas	80%	83%	86%	64%	74%
Wood	7	11	4	5	24
Electricity	6	0	6	20	0
Bottled Propane	2	3	1	1	0
Oil	1	1	0	*	0
Piped Propane	0	0	0	0	0
Other	2	2	0	7	2
Multiple answer	1	0	1	3	0
No response	1	0	2	0	0
	100%	100%	100%	100%	100%

The left column of Table 23 shows that four-fifths of those respondents planning to convert their residence to another main heating fuel within the next two years, plan to convert to natural gas. This is true regardless of whether the respondent currently has natural gas service available. Obviously, the bulk of those who do not now have natural gas service available, base their plans to switch on the expectation of obtaining such service in the next two years.

Thirty-seven percent of all those planning to switch, presently heat with oil. Thirty-two percent heat with electricity, 20 percent with wood and 11 percent with other fuels.

The last questions in this section asked respondents for their opinions about different fuels. First they were asked what types of fuels they would prefer if they moved into a new home.

Table 23. Main Heating Fuel Preferred

2h. Assuming all fuels were available, what type of main heating fuel would you prefer if you moved to a new home?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Natural Gas	63%	67%	67%	70%	44%	60%	72%
Electricity	14	11	7	8	30	21	10
Wood	4	2	8	6	5	4	1
Oil	1	*	1	1	4	*	*
Propane	1	1	*	*	1	*	1
Other	2	3	1	1	2	1	2
No preference	2	2	4	1	4	2	1
Multiple answer	4	4	7	6	3	5	5
No response	9	10	5	7	7	7	8
	100%	100%	100%	100%	100%	100%	100%

Assuming all fuels were available, over three in five respondents preferred natural gas as the main heating fuel if they moved into a new home. One in seven respondents preferred electricity.

These responses are clearly coloured by the current unavailability of natural gas on Vancouver Island. If natural gas service were available there, we estimate that the over-all preference for natural gas would increase to nearly 70 percent, with a corresponding decline in the preference for electricity.

Continuing on from this question, respondents were asked to indicate all other heating fuels that would be acceptable to them.

Table 24. Total Acceptability of Heating Fuels by Customer

2h. And which other heating fuels would be acceptable to you?

	BCH TOTAL (5218)	WK (1270)	GA (3962)
Natural Gas	79%	77%	86%
Electricity	48	61	46
Wood	20	21	15
Propane	14	9	12
Oil	11	4	7
Other	5	4	4

Four-fifths of the sample accepts natural gas as a home heating fuel as do 86 percent of those who have natural gas service available. Half the respondents who answered this question said they found electricity was an acceptable heating fuel, with a somewhat higher acceptability (61 percent) observed in the West Kootenay area.

Customers were next asked to rate the safety of each of the fuels for use in the home.

Table 25. Opinions About Safety of Fuels For Use in the Home

2i. What are your opinions about the safety of the following fuels for use in the home?

Electricity	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Not safe at all	*%	*%	1%	1%	*%	*%	*%
Not very safe	1	1	1	1	*	1	1
Reasonably safe	37	37	39	36	33	31	37
Completely safe	49	47	47	48	57	56	48
Multiple answer	1	1	0	*	1	*	1
No response	12	14	12	14	9	12	13
	100%	100%	100%	100%	100%	100%	100%

Natural Gas	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Not safe at all	2%	1%	*%	1%	4%	1%	1%
Not very safe	4	2	3	2	8	3	1
Reasonably safe	52	54	51	47	55	47	51
Completely safe	30	33	35	39	16	35	40
Multiple answer	1	1	1	1	*	*	1
No response	11	9	9	10	17	14	6
	100%	100%	100%	100%	100%	100%	100%

Piped Propane	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Not safe at all	5%	4%	4%	3%	6%	4%	4%
Not very safe	22	23	22	16	22	17	20
Reasonably safe	39	36	42	43	41	37	38
Completely safe	8	8	11	11	6	8	10
Multiple answer	*	1	*	0	*	*	*
No response	26	28	21	27	25	34	28
	100%	100%	100%	100%	100%	100%	100%

Bottled Propane	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Not safe at all	12%	13%	10%	7%	9%	10%	13%
Not very safe	31	32	30	27	29	25	30
Reasonably safe	28	25	36	36	33	28	27
Completely safe	4	4	5	4	4	4	4
Multiple answer	*	*	*	1	1	1	*
No response	25	26	17	25	24	32	26
	100%	100%	100%	100%	100%	100%	100%

Oil	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Not safe at all	2%	2%	3%	2%	1%	3%	2%
Not very safe	10	12	15	12	2	9	12
Reasonably safe	45	42	50	44	49	44	44
Completely safe	20	18	16	18	28	14	17
Multiple answer	*	*	*	0	*	*	*
No response	23	26	16	24	20	30	25
	100%	100%	100%	100%	100%	100%	100%

Wood	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Not safe at all	5%	6%	2%	6%	3%	5%	5%
Not very safe	21	22	21	23	18	21	23
Reasonably safe	44	39	55	46	50	44	42
Completely safe	8	8	8	6	8	5	7
Multiple answer	*	1	*	*	1	0	*
No response	22	24	14	19	20	25	23
	100%	100%	100%	100%	100%	100%	100%

Nearly all the respondents who answered this question thought electricity and natural gas were reasonably or completely safe fuels for use in the home.

Nearly two thirds of the respondents said oil was reasonably or completely safe to use in the home. However, one in eight said oil was not very or not at all safe to use.

A quarter of the respondents said piped propane was not very or not at all safe. Just under half the respondents said piped propane was reasonably or completely safe.

Two in five respondents said bottled propane was not very or not at all safe to use in the home while about a third said bottled propane was safe to use in the home.

Over half the respondents said wood was safe for use in the home, but a quarter of the respondents said wood was not safe ("not very" or "not at all safe").

Respondents were asked to rank how much influence various factors would have in their choice of a new home heating system. Respondents were asked to give a "1" to the factor they felt would be most important in their choice of a new home heating system, up to a "5" for the least important factor. The average rankings are shown in the following table.

Table 26. Influence of Various Factors In the Choice of a New Home Heating System

2j. Please rank how much influence each of the following factors would have in your choice of a new home heating system. (Mean rank)

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Fuel Price: Mean rank	2.15	2.21	2.00	2.06	2.13	2.11	2.16
Dependability of fuel supply: Mean rank	2.71	2.71	2.63	2.58	2.81	2.58	2.59
Comfort: Mean rank	2.90	2.94	2.87	2.96	2.79	2.79	2.85
Environmental impact: Mean rank	3.35	3.23	3.65	3.62	3.41	3.55	3.44
Initial cost of equipment: Mean rank	3.76	3.80	3.71	3.66	3.73	3.79	3.84

Fuel price was ranked as the most important factor in the selection of a new home heating system. Over half of the respondents gave this factor one of the two top ratings.

Dependability of fuel supply received second ranking. Nearly forty percent of the respondents gave one of the top two rankings to this factor.

Comfort ranked third; over thirty percent ranked this element first or second.

Environmental impact ranked fourth, substantially lower than comfort. Just over a fifth of the respondents gave environmental impact one of the top two rankings.

Finally, the lowest ranking was given to the initial cost of the equipment, possibly because residences are typically purchased with the heating system already installed and most people do not buy this equipment separately. Just seventeen percent of the respondents gave one of the two highest rankings to this factor.

Fuel cost is relatively more important in the North, where the severe weather clearly influences perceptions of the importance of these various factors. Environmental impact, on the other hand, is cited more frequently in the Lower Mainland as an important factor, although it remains fourth in order of importance even for this group.

* * * * *

C. FIREPLACES

In this section of the questionnaire, respondents were asked about fireplaces in the residence, not including free standing wood stoves.

Respondents were first asked how many fireplaces were in their residence.

Table 27. Number of Fireplaces in the Residence

3a. Please indicate the number of fireplaces in this residence. (Categorized responses)

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
No fireplace	17%	16%	27%	23%	18%	21%	17%
One fireplace	33	31	26	27	39	31	33
More than one fireplace	22	28	8	15	16	13	27
No response	28	25	39	35	27	35	23
	100%	100%	100%	100%	100%	100%	100%
Mean:	0.8	0.9	0.4	0.6	0.7	0.6	0.9

Table 27 shows that 17 percent of the sample reports no fireplace. An additional 28 percent fail to answer the question at all. The most reasonable inference to be made about these cases is that they also have no fireplace, although we stress that this is no more than an inference.

Assuming that the non-responders do not in fact have fire places, then 55 percent of the sample reports at least one fireplace. Thirteen percent report two or more.

Respondents who indicated they had at least one fireplace were asked what the fireplace (or fireplaces) was primarily used for.

Table 28. Primary Use for Fireplace or Fireplaces

3b. Is(Are) the fireplace(s) used primarily for heating, atmosphere or both? BASE = All who have fireplaces

	BCH TOTAL (2822)	LM (1831)	ND (172)	SI (223)	VI (596)	WK (558)	GA (2359)
Heating	9%	7%	7%	12%	14%	7%	7%
Atmosphere	36	36	43	36	31	37	37
Both	30	33	24	27	28	31	31
Do not use	19	19	20	19	20	19	19
Multiple answer	2	2	1	2	2	2	2
No response	4	3	5	4	5	4	4
	100%	100%	100%	100%	100%	100%	100%

Two thirds of respondents use their fireplace or fireplaces for atmosphere. Two-fifths use their fireplace for heating. (There is some overlap between these two groups.) Nearly one in five respondents do not use their fireplace at all.

These respondents were also asked if they had natural gas, electric, propane or wood burning inserts installed in their fireplace

Table 29. Number of Installations in Fireplace

3c. How many of the following have been installed in this /these fireplaces(s)? BASE = All those who have fireplaces.

Natural gas-insert

	BCH TOTAL (2822)	LM (1831)	ND (172)	SI (223)	VI (596)	WK (558)	GA (2359)
One	12%	15%	9%	11%	1%	10%	16%
More than one	1	2	*	*	*	1	2
None	87	83	91	89	99	89	82
	100 %	100%	100%	100%	100%	100%	100%
Mean:	0.1	0.2	0.1	0.1	0.0	0.1	0.2

Natural gas logs only

	BCH TOTAL (2822)	LM (1831)	ND (172)	SI (223)	VI (596)	WK (558)	GA (2359)
One	19%	17%	29%	26%	19%	21%	19%
More than one	2	3	*	*	*	2	3
None	79	80	71	74	81	77	78
	100%	100%	100%	100%	100%	100%	100%
Mean:	0.2	0.2	0.3	0.3	0.2	0.3	0.3

Electric insert

	BCH TOTAL (2822)	LM (1831)	ND (172)	SI (223)	VI (596)	WK (558)	GA (2359)
One	1%	1%	1%	0%	1%	1%	1%
None	99	99	99	100	99	99	99
	100%	100%	100%	100%	100%	100%	100%
Mean:	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Propane insert

	BCH TOTAL (2822)	LM (1831)	ND (172)	SI (223)	VI (596)	WK (558)	GA (2359)
One	1%	*%	1%	0%	3%	0%	0%
More than one	*	0	0	0	*	0	0
None	99	100	99	100	97	100	100
	100%	100%	100%	100%	100%	100%	100%
Mean:	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Wood burning insert

	BCH TOTAL (2822)	LM (1831)	ND (172)	SI (223)	VI (596)	WK (558)	GA (2359)
One	24%	23%	25%	24%	28%	26%	22%
More than one	2	2	1	1	2	1	2
None	74	75	74	75	70	73	76
	100%	100%	100%	100%	100%	100%	100%
Mean:	0.3	0.3	0.3	0.3	0.3	0.3	0.3

The majority of these respondents did not give an answer with regard to the number of inserts installed in their fireplace. We again assume that those who did not answer do not in fact possess the particular type of fireplace insert in question.

Wood burning inserts are owned by 24 percent of those who have fireplaces, followed closely by natural gas logs, owned by 21 percent of those with fireplaces. Natural gas inserts are owned by just 10 percent of fireplace owners, while electric and propane inserts are mentioned by just one percent of fireplace owners. Natural gas inserts are of course rare on Vancouver Island, where they are replaced by wood-burning and propane inserts.

The final question about fireplaces asked all respondents to indicate what type of fireplace they would prefer if they moved to a new home.

Table 30. Type of Fireplace Preferred

3d. If you moved to a new home, what type of fireplace would you prefer?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Natural Gas	39%	44%	29%	44	25	36%	47%
Wood	38	37	42	25	46	33	32
Propane	*	*	0	*	1	*	*
No preference	4	3	4	4	5	3	3
Don't want fireplace	11	7	17	19	14	19	11
Multiple answer	3	4	3	1	2	1	3
No response	5	5	5	7	7	8	4
	100%	100%	100%	100%	100%	100%	100%

Two in five respondents would prefer a wood fireplace if they moved to a new home, and approximately the same number would prefer a natural gas fireplace. Again, this latter figure is depressed somewhat by the hesitation of Vancouver Island residents to select natural gas.

Eleven percent of respondents do not want a fireplace.

B.C. HYDRO CUSTOMERS

		Number of fireplaces		
Preferred Type	BCH TOTAL (5218)	None (2396)	One (1675)	More than One (3074)
Natural Gas	39%	27%	45%	56%
Wood	38	41	38	32
Propane	*	*	*	*
Don't want fireplace	11	16	8	4
No preference	4	3	6	2
Multiple answer	3	2	3	5
No response	6	11	1	1
	100%	100%	100%	100%

WEST KOOTENAY POWER CUSTOMERS

Preferred type	BCH TOTAL (1270)	Number of fireplaces: None (711)	One (399)	More than One (161)
Natural Gas	36%	28%	47%	43%
Wood	32	29	37	35
Propane	*	0	1	0
Don't want fireplace	19	25	11	13
No preference	3	3	2	4
Multiple answer	2	1	1	2
No response	8	14	1	3
	100%	100%	100%	100%

In general terms, the preference for a natural gas insert increases as the number of fireplaces in the residence increases. More respondents with no fireplace would prefer to move to a home with a wood fireplace than to a home with a natural gas fireplace, particularly in the BC Hydro service area. In both areas, those respondents currently without a fireplace are most likely not to want one if they moved to a new home.

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D. WATER HEATING FUEL

In this section of the questionnaire, respondents were asked about fuels used for heating water. First, they were asked to check all fuels used for heating hot water in the residence.

Table 31. Fuels Used For Heating Hot Water

4a. Please check all the fuels used for heating hot water in this residence. (Multiple responses)

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Electricity	48%	34%	56%	49%	83%	63%	31%
Natural Gas	46	62	42	48	1	35	72
Oil	3	2	1	1	10	*	1
Bottled Propane	1	*	1	1	1	*	0
Piped Propane	1	1	1	*	1	0	*
Solar	1	*	0	0	1	*	*
Other	1	1	3	2	2	2	1
No response	6	7	3	3	5	4	2

About half of the respondents use electricity for heating hot water in their residence and slightly fewer use natural gas for heating hot water.

Those who heat their homes with natural gas also use this fuel to heat water. By contrast, homes heated with all other fuels tend to use electricity to heat water.

The use of natural gas for water heating is especially prevalent in the Lower Mainland and among gas available respondents.

Respondents were next asked if they are planning to convert their residence to a different hot water fuel in the next two years.

Table 32. Respondents Planning to Convert to a Different Hot Water Heating Fuel in the Next Two Years

4b. Do you plan to convert this residence to a different hot water heating fuel in the next two years?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Yes	4%	2%	5%	5%	8%	4%	3%
No	88	89	90	91	84	90	92
No response	8	9	5	4	8	6	5
	100%	100%	100%	100%	100%	100%	100%

Eighty-nine percent of the respondents said they were not planning to convert their residence to a different hot water heating fuel in the next two years.

The four percent who said they were planning to convert their residence to a different hot water heating fuel were asked to indicate what water heating fuel they are planning to convert to.

Table 33. Water Heating Fuels Respondents Are Planning to Convert to, Asked of Those Planning to Convert

4b. What water heating fuel are you planning to convert to? BASE = All who plan to convert: Q4b = 1

Customers with gas service available

	Water heating fuel switching from			
Water heating fuel planning to convert to	TOTAL (126)	Nat. Gas (3)	Elec. (111)	Other (12)
Natural Gas	94%	0%	97%	83%
Piped Propane	2	0	1	17
Solar	2	67	0	0
Electricity	1	33	0	0
Bottled Propane	0	0	0	0
Other	1	0	2	0
	100%	100%	100%	100%

Customers with no gas service available

Water heating fuel planning to convert to	Water heating fuel switching from: TOTAL (115)	Nat. Gas (3)	Elec. (89)	Other (23)
Natural Gas	82%	100%	83%	74%
Bottled Propane	4	0	5	4
Electricity	3	0	0	13
Piped Propane	1	0	1	0
Solar	1	0	1	0
Other	9	0	10	9
	100%	100%	100%	100%

Nearly all of the 4 percent of respondents planning to convert the hot water heating fuel in their homes in the next two years, plan to convert to natural gas.

* * * * *

E. LIGHTING

In this section, respondents were asked to indicate the types of light bulbs they have at their residence, and the number of each type.

Table 34. Types of Light Bulbs in the Residence

5a. Please indicate whether you have each of the following types of light bulb, and how many you have of each type, at this residence. (Multiple responses)

	BCH TOTAL (4973)	LM (2932)	ND (495)	SI (511)	VI (1035)	WK (1234)	GA (3844)
Incandescent	91%	92%	89%	88%	90%	91%	91%
Outdoor light bulbs	78	76	83	85	76	87	84
Fluorescent	62	65	58	60	56	63	67
Compact fluorescent	11	10	12	12	12	11	11
Other	8	8	6	7	7	6	7

Over nine in ten respondents have incandescent light bulbs and four in five respondents have outdoor light bulbs at their residences. Nearly three-quarters of the respondents have fluorescent or compact fluorescent light bulbs at their residences (most of these - 63 percent - are fluorescent).

Table 35. Average Number of Light Bulbs in the Residence

	BCH TOTAL (4973)	LM (2932)	ND (495)	SI (511)	VI (1035)	WK (1234)	GA (3844)
Incandescent	20.1	21.3	17.2	18.0	19.2	19.5	21.2
Outdoor light bulbs	3.5	3.8	3.0	3.5	3.0	3.8	3.9
Fluorescent	2.8	3.2	2.0	2.4	2.2	2.5	3.1
Compact fluorescent	0.3	0.3	0.2	0.4	0.2	0.2	0.3
Other	0.7	0.6	0.5	0.8	0.7	0.5	0.6

Those respondents who answered this question report an average of 20.1 incandescent light bulbs per household. Those who report owning outdoor light bulbs say they have an average of 3.5 each. Respondents who have fluorescent bulbs report an average of 2.8 each and those who have compact fluorescent bulbs have an average of 0.3 each.

F. APPLIANCES

Respondents were asked to indicate the number and age of various appliances used for such things as cooking, food storage, laundry, air conditioning and other uses around the residence.

If two or more of the same appliance were used, the respondents were asked to give the age of all the appliances. The average ages of the first two appliances listed are shown in the following tables, along with the average number of appliances in use.

Table 36. Number and Age of Cooking Appliances in the Residence

6a. Please indicate the number of each of the following appliances in use in the residence. (Include only appliances for which you pay the entire energy bill.) For each appliance used, please indicate its approximate age. If two or more of the same appliance are used, please give the age of both (or all).

B.C. HYDRO CUSTOMERS

	Average number in use	Average age of first app.	Average age of second app.	% Pen. of gas avail. cust.
Cooking	(5218)			(3074)
Electric range	0.93	9.8 (4148)	12.7 (105)	87.8% (2700)
Natural gas range	0.04	11.3 (173)	15.0 (9)	6.2 (190)
Electric cook top	0.14	7.9 (564)	6.4 (18)	11.5 (352)
Natural gas cook top	0.01	7.0 (60)	- (0)	2.0 (63)
Separate electric oven	0.17	7.5 (792)	8.5 (15)	16.3 (500)
Separate natural gas oven	0.00	7.4 (20)	- (0)	0.6 (17)
Microwave oven	0.75	4.4 (3661)	5.0 (41)	77.8 (2394)

Propane barbecue (for outdoors)	0.47	4.2 (2323)	4.4 (57)	50.5 (1551)
Natural gas barbecue (for outdoors)	0.01	4.4 (56)	1.3 (1)	1.4 (43)

WEST KOOTENAY POWER CUSTOMERS

	Average number in use	Average age of first app.	Average age of second app.	% Pen. of gas avail. cust.
Cooking	(1270)			(887)
Electric range	0.95	9.6 (1058)	12.8 (25)	90.5% (803)
Natural gas range	0.03	13.0 (30)	- (0)	3.1 (28)
Electric cook top	0.13	10.0 (140)	- (0)	12.6 (107)
Natural gas cook top	0.01	8.2 (10)	- (0)	1.0 (9)
Separate electric oven	0.15	8.7 (171)	6.0 (1)	14.2 (126)
Separate natural gas oven	0.00	1.4 (5)	- (0)	0.7 (6)
Microwave oven	0.75	4.6 (897)	5.7 (8)	75.5 (670)
Propane barbecue (for outdoors)	0.51	4.9 (597)	4.8 (12)	52.8 (468)
Natural gas barbecue (for outdoors)	0.04	4.7 (39)	- (0)	3.7 (33)

Table 37. Number and Age of Food Storage Appliances in the Residence

6a. Please indicate the number of each of the following appliances in use in the residence. (Include only appliances for which you pay the entire energy bill.) For each appliance used, please indicate its approximate age. If two or more of the same appliance are used, please give the age of both (or all).

B.C. HYDRO CUSTOMERS

	Average number in use (5218)	Average age of first app.	Average age of second app.	% Pen. of gas avail. cust. (3074)
Refrigerator manual defrost	0.35	15.2 (1371)	12.1 (62)	31.4% (964)
Refrigerator automatic defrost	0.84	8.1 (3691)	10.9 (226)	80.3 (2471)
Separate chest freezer	0.57	11.3 (2541)	13.0 (154)	55.3 (1700)
Separate upright freezer	0.10	9.7 (432)	1.3 (1)	1.0 (285)

WEST KOOTENAY POWER CUSTOMERS

	Average number in use (1270)	Average age of first app.	Average age of second app.	% Pen. of gas avail. cust. (887)
Refrigerator manual defrost	0.35	15.7 (335)	16.8 (18)	28.5% (253)
Refrigerator automatic defrost	0.87	8.4 (933)	12.2 (51)	84.6 (750)
Separate chest freezer	0.74	12.3 (783)	13.7 (65)	68.3 (606)
Separate upright freezer	0.13	9.0 (142)	11.0 (7)	12.2 (108)

Table 38. Number and Age of Laundry Appliances in the Residence

6a. Please indicate the number of each of the following appliances in use in the residence. (Include only appliances for which you pay the entire energy bill.) For each appliance used, please indicate its approximate age. If two or more of the same appliance are used, please give the age of both (or all).

B.C. HYDRO CUSTOMERS

	Average number in use (5218)	Average age of first app.	Average age of second app.	% Pen. of gas avail. cust. (3074)
Clothes washer	0.86	8.1 (3986)	7.0 (9)	88.9% (2734)
Electric clothes dryer	0.80	8.9 (3645)	7.1 (8)	81.0 (2491)
Natural gas clothes dryer	0.03	10.9 (113)	- (0)	3.9 (121)

WEST KOOTENAY POWER CUSTOMERS

	Average number in use (1270)	Average age of first app.	Average age of second app.	% Pen. of gas avail. cust. (887)
Clothes washer	0.89	8.7 (1041)	9.4 (2)	91.7% (813)
Electric clothes dryer	0.83	9.4 (980)	8.0 (1)	85.1 (755)
Natural gas clothes dryer	0.02	13.1 (18)	- (0)	2.5 (22)

Table 39. Number and Age of Air Conditioning Appliances in the Residence

6a. Please indicate the number of each of the following appliances in use in the residence. (Include only appliances for which you pay the entire energy bill.) For each appliance used, please indicate its approximate age. If two or more of the same appliance are used, please give the age of both (or all).

B.C. HYDRO CUSTOMERS

	Average number in use (5218)	Average age of first app.	Average age of second app.	% Pen. of gas avail. cust. (3074)
Electrical central system	0.02	10.3 (100)	- (0)	3.3% (101)
Natural gas absorption system	0.00	8.0 (7)	- (0)	0.8 (26)
Electric window unit	0.04	8.7 (177)	11.4 (2)	5.1 (157)
Humidifier (in regular use)	0.03	6.0 (142)	- (0)	4.3 (131)
Heat pump	0.01	5.9 (36)	- (0)	0.1 (5)

WEST KOOTENAY POWER CUSTOMERS

	Average number in use (1270)	Average age of first app.	Average age of second app.	% Pen. of gas avail. cust. (887)
Electrical central system	0.15	7.8 (146)	- (0)	16.3% (145)
Natural gas absorption system	0.01	9.7 (12)	- (0)	1.5 (13)
Electric window unit	0.26	8.8 (243)	7.3 (8)	22.5 (200)
Humidifier (in regular use)	0.08	6.2 (94)	9.0 (1)	9.6 (85)
Heat pump	0.02	8.0 (30)	- (0)	2.7 (24)

Table 40. Number and Age of Other Appliances in the Residence

6a. Please indicate the number of each of the following appliances in use in the residence. (Include only appliances for which you pay the entire energy bill.) For each appliance used, please indicate its approximate age. If two or more of the same appliance are used, please give the age of both (or all).

B.C. HYDRO CUSTOMERS

Other Appliances	Average number in use (5218)	Average age of first app.	Average age of second app.	% Pen. of gas avail. cust. (3074)
Hot water heater	0.61	7.2 (2734)	7.5 (17)	58.5% (1799)
VCR	0.74	3.8 (3208)	3.8 (224)	68.1 (2096)
Dishwasher	0.55	7.1 (2625)	2.9 (19)	60.1 (1849)
Waterbed heater	0.21	5.9 (845)	4.2 (41)	18.0 (554)
Electric sauna	0.02	10.5 (85)	- (0)	1.7 (52)
Electric car block heater	0.19	5.8 (574)	5.9 (99)	15.2 (469)
Electric car interior heater	0.03	5.7 (119)	6.6 (5)	2.8 (85)
Natural gas patio heater	0.00	8.0 (1)	- (0)	0.0 (1)
Personal computer	0.22	3.2 (1011)	3.1 (28)	24.0 (735)
Fax machine	0.02	1.8 (86)	5.4 (2)	2.1 (66)
Television	1.40	6.4 (4515)	7.1 (1102)	94.5 (2906)

Compact disc player	0.20	2.2 (905)	2.5 (23)	21.1 (648)
Electric lawnmower	0.21	6.7 (987)	7.4 (11)	25.4 (782)
Gasoline lawnmower	0.45	6.8 (2043)	7.1 (70)	45.6 (1403)

WEST KOOTENAY POWER CUSTOMERS

	Average number in use (1270)	Average age of first app.	Average age of second app.	% Pen. of gas avail. cust. (887)
Hot water heater	0.73	8.7 (773)	7.9 (6)	71.4% (634)
VCR	0.66	4.0 (721)	3.7 (28)	63.1 (560)
Dishwasher	0.55	7.1 (642)	- (0)	58.1 (515)
Waterbed heater	0.25	6.0 (234)	5.1 (16)	20.9 (185)
Electric sauna	0.02	7.8 (27)	- (0)	2.1 (19)
Electric car block heater	0.35	6.4 (274)	7.1 (42)	26.7 (237)
Electric car interior heater	0.04	5.3 (35)	1.2 (1)	3.6 (32)
Natural gas patio heater	0.00	0.0 (0)	- (0)	0.0 (0)
Personal computer	0.16	3.2 (177)	2.2 (8)	14.0 (124)
Fax machine	0.01	1.3 (12)	- (0)	0.9 (8)

Television	1.37	7.2 (1099)	7.2 (258)	93.3 (828)
Compact disc player	0.15	2.6 (167)	2.0 (1)	15.0 (133)
Electric lawnmower	0.23	7.3 (264)	9.5 (3)	25.9 (230)
Gasoline lawnmower	0.59	7.1 (621)	7.4 (34)	55.1 (489)

* * * * *

G. POOLS AND HOT TUBS

Respondents were asked if they had a swimming pool, hot tub, whirlpool or jacuzzi at their residence; those who did were asked to indicate the type of heater used to heat the pool, hot tub, whirlpool or jacuzzi.

Table 41. Respondents with Swimming Pools at Their Residence

7a. Do you have a swimming pool at this residence?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Yes, indoor	1%	2%	1%	*%	2%	1%	1%
Yes, outdoor	6	7	3	5	2	5	6
No	80	79	84	82	82	81	81
Yes, both	*	*	0	0	0	*	*
No response	13	12	12	13	14	13	12
	100%	100%	100%	100%	100%	100%	100%

Eighty percent of respondents said they do not have a swimming pool at their residence. Only seven percent of respondents indicated they have an indoor or outdoor swimming pool. Pools are most prevalent in the Lower Mainland (9%) and are least common (4%) in the North and on Vancouver Island.

Table 42. Type of Heater Used to Heat the Swimming Pool

7a. Please indicate the type of heater used.
BASE = All who have swimming pool: Q7a = 1,2,4

	BCH TOTAL (362)	LM (280)	ND (15)	SI (27)	VI (39)	WK (70)	GA (263)
Natural Gas	27%	31%	28%	24%	0%	25%	44%
Electric	7	7	7	*	10	6	2
Solar	8	5	18	24	10	12	9
Propane	2	*	6	9	7	0	0
Not heated	10	7	22	28	16	28	13
Other	2	1	12	2	10	6	2
Don't know	23	25	7	3	31	9	8
Multiple answer	11	13	0	8	6	8	14
No response	10	11	*	2	10	6	8
	100%	100%	100%	100%	100%	100%	100%

Over a quarter of the respondents who have a swimming pool, heat the pool using natural gas. Seven percent use electricity and eight percent use solar energy to heat their swimming pools. Solar heating is especially popular in the Southern Interior.

Ten percent of respondents said their pool was not heated.

Table 43. Respondents with a Hot Tub, Whirlpool or Jacuzzi at Their Residence

7b. Do you have a hot tub, whirlpool or jacuzzi at this residence?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Yes, indoor	6%	6%	3%	4%	6%	6%	6%
Yes, outdoor	2	2	2	2	1	3	3
Yes, both	*	*	0	0	1	*	*
No	75	75	76	74	74	73	75
Multiple answer	*	*	1	*	0	*	*
No response	17	17	18	20	18	18	16
	100%	100%	100%	100%	100%	100%	100%

Three quarters of respondents said they did not have a hot tub, whirlpool or jacuzzi at their residence, just under nine percent of the respondents said they did.

Table 44. Type of Heater Used to Heat the Hot Tub, Whirlpool or Jacuzzi, Asked of Those Who Have a Hot Tub, Whirlpool or Jacuzzi

7b. Please indicate the type of heater used.
BASE = All who have a hot tub, whirlpool or jacuzzi: Q7b = 1,2,3

	BCH TOTAL (399)	LM (260)	ND (27)	SI (30)	VI (81)	WK (113)	GA (340)
Electric	53%	43%	73%	61%	76%	70%	48%
Natural Gas	27	35	22	30	2	19	38
Propane	1	*	4	*	1	0	*
Other	1	1	0	2	0	5	1
Multiple answer	3	5	*	0	2	1	4
No response	15	16	1	7	19	5	9
	100%	100%	100%	100%	100%	100%	100%

Fifty-three percent of respondents who said they have a hot tub, whirlpool or jacuzzi, heat it using electricity. Twenty-seven percent of respondents heat with natural gas.

These respondents were also asked if they cover their hot tub, whirlpool or jacuzzi when it is not in use.

Table 45. Respondents Who Cover Their Hot Tub, Whirlpool or Jacuzzi When Not In Use

7b. Do you cover your hot tub when not in use?
BASE = All who have a hot tub, whirlpool or jacuzzi: Q7b = 1,2,3

	BCH TOTAL (399)	LM (260)	ND (27)	SI (30)	VI (81)	WK (113)	GA (340)
Yes	35%	29%	60%	62%	34%	58%	41%
No	24	29	22	12	12	13	22
No response	41	42	18	26	54	29	37
	100%	100%	100%	100%	100%	100%	100%

Nearly a quarter of respondents said they do cover their hot tub, whirlpool or jacuzzi when it is not in use.

* * * * *

H. HOT WATER CONSUMPTION

In this section of the questionnaire, respondents were asked about their hot water consumption in the residence - in particular, the total number of dishwasher loads per week, the total number of loads of laundry per week, the total number of baths per week, and the total number of showers per week.

Table 46. Number of Dishwasher Loads Per Week

8a. Please indicate the total number of each of the following used in this residence:

Number of dishwasher loads per week

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
None	14%	14%	13%	13%	12%	13%	10%
One to two loads	13	15	8	10	10	11	14
Three loads	10	11	7	6	10	9	10
four to five loads	12	11	10	12	13	13	12
Six or more loads	17	18	21	17	15	18	20
	100%	100%	100%	100%	100%	100%	100%
Mean:	2.4	2.5	2.4	2.2	2.2	2.5	2.7

Those respondents who answered this question do an average of 2.4 dishwasher loads per week.

Table 47. Number of Loads Of Laundry Per Week

8a. Please indicate the total number of each of the following used in this residence:

Number of loads of laundry per week
(any temperature)

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
None	14%	14%	13%	13%	12%	13%	10%
One to two loads	25	27	14	20	29	24	25
Three to four loads	25	26	22	24	25	24	25
Five to six loads	16	15	17	19	16	16	16
Seven or more loads	20	18	34	24	18	23	24
	100%	100%	100%	100%	100%	100%	100%
Mean:	4.3	4.1	5.5	4.8	4.0	4.5	4.6

Those respondents who answered this question do an average of 4.3 loads of laundry per week. Laundry is done more frequently in the North than anywhere else and least often on Vancouver Island. This may be a reflection of average family size.

Table 48. Number of Baths Per Week

8a. Please indicate the total number of each of the following used in this residence:

Number of baths per week

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
None	33%	36%	27%	27%	28%	28%	32%
One to two baths	17	17	17	20	18	19	17
Three to four baths	15	13	19	20	17	20	15
Five to seven baths	19	17	20	17	24	19	18
Eight or more baths	16	17	17	16	13	14	18
	100%	100%	100%	100%	100%	100%	100%
Mean:	4.2	4.3	4.3	4.1	4.0	4.0	4.5

The respondents who answered this question use an average of 4.2 baths per week in their household. Respondents with natural gas available take more baths than average.

Table 49. Number of Showers Per Week

8a. Please indicate the total number of each of the following used in this residence:

Number of showers per week

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
None	19%	18%	17%	19%	21%	24%	18%
One to five showers	19	18	22	22	21	22	20
Six to seven showers	21	21	16	17	24	17	18
Eight to thirteen showers	16	15	20	20	15	16	17
Fourteen or more showers	25	28	25	22	19	21	27
	100%	100%	100%	100%	100%	100%	100%
Mean:	8.4	8.9	8.3	7.8	7.3	7.2	8.8

The respondents who answered this question use an average of 8.4 showers per week in their household.

* * * * *

I. CONSERVATION

This section of the questionnaire measures actions respondents have taken or are willing to take to conserve energy.

First, respondents were asked if they always, usually, occasionally or never take a number of actions specifically to conserve energy. We attached a numerical value to each rating so a mean could be calculated (Always = 1, Usually = 2, Occasionally = 3 and Never = 4).

Table 50. Actions Taken to Conserve Energy

9a. Please indicate whether you always, usually, occasionally or never take the following actions specifically to conserve energy.

	BCH TOTAL Mean (5218)
Wash only full loads of dishes in the dishwasher	1.49
Turn off the lights in rooms not in use	1.51
Turn back the thermostat or use a setback thermostat at bedtime	1.57
Turn back the thermostat or use a setback thermostat when no one is home	1.58
Wash only full loads of clothes	1.62
Wash clothes in warm water with a cold water rinse	1.97
Use less or no heating in unused rooms	1.99
Service heating system regularly	2.18
Do not use the dry cycle of the dishwasher	2.51
Wash and rinse clothes in cold water	2.58

From this table we see that, on an average, respondents are relatively more inclined to conserve energy by taking actions to reduce energy consumption in rooms that are not in use in their residence, such as turning back the thermostat and turning off lights.

Respondents are also more inclined to take actions to conserve energy by washing only full loads of clothes and dishes.

Respondents are relatively less inclined to conserve energy by having their heating system serviced regularly, washing clothes in cold water only, and refraining from using the dry cycle of their dishwasher.

The second part of the section on energy conservation asked respondents to indicate the actions they would be willing to take at their residence specifically to conserve energy.

Respondents were asked to indicate if they had done so, planned to do, were willing to do or were not willing to do certain actions to conserve energy. Again, we assigned a numerical value to each rating so a mean could be calculated (Have done = 1, Planning to do = 2, Willing to do = 3 Not willing to do/Don't know = 4). These means are shown in the left column in the table. The right column indicates the proportion of residences where action had already been taken to conserve energy.

Table 51. Actions Taken At the Respondent's Residence to Conserve Energy

9b. Have you taken or are you willing to take any of the following actions at this residence specifically to conserve energy?

	Have done	Plan. to do	Will. to do	Not will. to do	Home already had	Mult. answ.	No resp.
Install weather-stripping or caulking	34%	9	10	15	20	*	12
Use a low-flow shower head or flow restrictor	28%	6	21	23	9	*	13
Improve home insulation in the walls or attic	21%	5	11	23	28	1	11
Install energy-efficient,or lower-wattage lighting	24%	7	30	21	4	1	13
Purchase energy-efficient appliances	19%	11	28	20	7	1	14
Install double-glazed windows	16%	5	8	26	33	1	11

	Have done	Plan. to do	Will. to do	Not will. to do	Home already had	Mult. answ.	No resp.
Install an insulated steel door and/or an aluminum storm door	17%	5	11	37	15	*	15
Install glass fireplace doors	14%	2	9	37	9	*	29
Install time-controlled thermostat	8%	6	26	39	5	*	16
Participate in energy-efficient appliance rebate program	4%	5	39	34	1	*	17
Install a hot water heater blanket	6%	4	29	41	3	*	17
Have a home energy audit	2%	1	35	44	1	*	17
Install storm windows	8%	2	6	59	5	*	20
Install triple-glazed windows	1%	1	6	69	1	*	22

One-third of the respondents moved into a home that already had double-glazed windows installed, and over one-quarter moved into a home with improved home insulation in the walls and attic. A fifth of the respondents moved into a residence that already had weather-stripping or caulking.

From this table we see that, on average, respondents were more likely to take minor actions at their residence to conserve energy. These actions included installing weather-stripping, using low-flow shower heads, installing energy-efficient lighting, and purchasing energy-efficient appliances.

As the action to conserve energy increases in difficulty and expense, respondents, on average, were more likely to indicate it was something they were not likely to do. These actions included installing triple-glazed windows, installing storm windows and having a home energy audit.

Next, respondents were asked to indicate their main reason for taking action to conserve energy.

Table 52. Main Reason For Taking Action to Conserve Energy

9c. What is your main reason for taking action to conserve energy?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Save Money	39%	39%	45%	38%	36%	36%	39%
It is a sensible thing to do	22	21	21	22	26	23	22
Help maintain the environment	9	9	7	6	9	6	8
Benefit future generations	2	2	1	2	3	3	2
Benefit B.C. generally	1	1	1	1	1	1	1
I take no action to conserve energy	1	1	1	1	*	*	1
Other	*	*	*	*	*	*	*
Multiple answer	22	22	21	25	22	27	23
No response	4	5	3	5	3	4	4
	100%	100%	100%	100%	100%	100%	100%

Two in five respondents indicated the main reason they take action to conserve energy is to save money. A fifth of the respondents said the main reason they conserve energy was because "it is a sensible thing to do". All other reasons were mentioned by fewer than one in ten respondents.

A fifth of all respondents gave more than one reason for taking action to conserve energy and we could not determine which reason was the main reason for doing so.

The final question on conservation asked how much respondents would be willing to pay for an improvement to their home heating system in order to save $100 per year on their fuel bill.

Table 53. Amount Respondents Are Willing to Pay to Save $100 per Year on Their Fuel Bill

9d. How much would you willing to pay for an improvement to your home heating system that would save you $100 per year on your fuel bill?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
$0	15%	16%	16%	13%	13%	15%	15%
$50	4	4	5	4	5	4	4
$100	10	11	11	10	8	10	11
$200	7	7	7	7	8	8	7
$300	7	7	7	7	6	6	7
$400	5	5	4	3	4	4	5
$500	16	15	16	16	19	15	17
$750	2	2	2	2	2	2	2
$1000	5	4	8	5	5	6	5
$1500	2	2	3	4	3	3	2
Multiple answer	*	*	*	1	*	*	*
No response	27	27	21	28	27	27	25
	100%	100%	100%	100%	100%	100%	100%
Mean of Valid Responses	$264	$250	$276	$289	$289	$272	$267

A quarter of respondents did not answer this question. Of those respondents who did give an answer, 34 percent said they would be willing to pay $500 or more for improvements to their home heating system so they could save $100 per year on their fuel bill. On the other hand, 40 percent said they would be willing to spend no more than $100 to save $100 per year on their fuel bills, including 21 percent who said they would pay nothing to reduce their fuel bills.

* * * * *

J. ABOUT YOU

Table 54. Age

10a. What is your age?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Under 34	20%	20%	31%	19%	14%	14%	17%
35-44	22	22	27	20	18	20	23
45-59	23	23	25	25	22	24	24
60 years and over	31	31	16	32	40	38	33
No response	4	4	1	4	6	4	3
	100%	100%	100%	100%	100%	100%	100%
Mean:	50.3	50.0	44.0	50.9	53.9	0.0	0.0

Table 55. Gender

10b. What is your sex?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Male	59%	59%	62%	62%	58%	62%	64%
Female	38	39	36	35	40	35	34
Multiple answer	1	*	1	1	1	1	1
No response	2	2	1	2	1	2	1
	100%	100%	100%	100%	100%	100%	100%

Table 56. Ratings for The Way Respondents Use Electricity

10c. Thinking about your own lifestyle and the way you use electricity, how would you rate yourself on a scale from 1 to 10, where a rating of "1" means you do not pay much attention to the amount of electricity you use, up to "10" which means you pay very close attention to trying to limit the amount of electricity you use.

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
1 Don't pay much attention to amount used	2%	2%	2%	2%	1%	1%	2%
2	1	*	1	*	1	1	1
3	3	3	2	2	2	2	3
4	2	2	2	3	2	2	3
5	13	13	12	13	12	12	13
6	8	8	11	9	8	8	8
7	16	16	20	15	17	17	16
8	28	27	26	28	29	27	28
9	11	12	12	9	11	11	10
10 Pay very close attention to amount used	12	12	10	15	15	15	12
No response	4	5	2	4	2	4	4
	100%	100%	100%	100%	100%	100%	100%
Mean:	7.21	7.17	7.10	7.25	7.37	7.37	7.15

Table 57. Amount Respondents Agree or Disagree to Two Statements

10d. Please indicate how much you agree or disagree with each of the following items:

I try new products before many of my friends.

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
1 Disagree strongly	15%	14%	17%	18%	15%	17%	15%
2	13	13	16	14	12	12	13
3	38	38	39	36	37	37	39
4	13	13	11	13	12	10	12
5 Agree strongly	8	8	9	7	9	8	8
No response	13	14	8	12	15	16	13
	100%	100%	100%	100%	100%	100%	100%
Mean:	2.84	2.87	2.75	2.75	2.84	2.77	2.82

I expect to live in my current home for many years.

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
1 Disagree strongly	16%	16%	20%	14%	14%	12%	13%
2	9	9	10	8	9	7	8
3	18	17	18	17	20	15	17
4	12	14	11	11	9	11	13
5 Agree strongly	34	32	35	39	36	43	38
Multiple answer	*	*	0	0	0	*	*
No response	11	12	6	11	12	12	11
	100%	100%	100%	100%	100%	100%	100%
Mean:	3.43	3.40	3.33	3.60	3.48	3.75	3.60

Table 58. Number of People Living in Household by Sex and Age

10e Please indicate the number of people living in your household by sex and age

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Average number of males in house	1.3	1.3	1.5	1.3	1.1	1.2	1.4
Average number of females in house	1.4	1.4	1.5	1.4	1.2	1.3	1.4
Grand Average of people in household	2.7	2.7	2.9	2.7	2.4	2.6	2.8
Census total (1986)	2.6						

Table 59. Total Household Income

10f. Your total household income before taxes for 1989 was:

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Under $10,000	6%	5%	8%	8%	7%	8%	5%
$10,000 to $19,999	14	14	13	17	14	18	14
$20,000 to $29,999	14	13	10	17	15	17	14
$30,000 to $39,999	15	15	15	17	15	13	15
$40,000 to $49,999	12	11	18	14	14	12	12
$50,000 to $59,999	11	12	12	8	8	8	12
$60,000 to $79,999	8	8	8	5	8	6	9
$80,000 and over	7	9	4	3	6	4	7
No response	13	13	12	11	13	14	12
	100%	100%	100%	100%	100%	100%	100%

Table 60. Highest Level of Education

10g. Which is the highest level of education achieved by the primary wage earner in the household?

	BCH TOTAL (5218)	LM (3095)	ND (506)	SI (533)	VI (1084)	WK (1270)	GA (3962)
Less than grade 12	20%	17%	29%	31%	19%	27%	22%
Completed high school	18	18	19	18	18	18	19
Some post-secondary school training	23	22	26	23	23	21	22
Some university	8	9	5	5	7	6	8
University graduate	19	22	10	8	20	12	17
Multiple answer	7	7	7	8	8	9	7
No response	5	5	4	7	5	7	5
	100%	100%	100%	100%	100%	100%	100%

WEST KOOTENAY POWER

BC hydro

BC Gas Inc.

ICG UTILITIES (BRITISH COLUMBIA) LTD

1990 RESIDENTIAL SURVEY

Province of British Columbia Ministry of Energy, Mines and Petroleum Resources

The person in your household who is most responsible for your decisions about home heating should fill out this questionnaire.

Please give answers which relate to the residence located at the address on the right-hand side of the cover letter, whether you live there or not.

In this questionnaire, some questions simply require you to make a "✓" in the one most appropriate box, for example:

Do you own or rent this residence?

Rent ☑ Own ☐

Some questions require you to fill in a number, for example: "6 years" or "1500 sq. ft."

Some questions allow you to check several answers. These questions will have the instruction "check as many as apply".

When you have finished, please insert the questionnaire in the enclosed envelope. No stamp is needed.

If you have misplaced the envelope, please mail the questionnaire to:

Campbell Goodell Consultants
502-1755 West Broadway
Vancouver, B.C. V6J 4S5

1. RESIDENCE

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a. Is this residence a:

- Single family house (detached) ☐1
- Duplex (2 units attached) ☐2
- Row house or townhouse (3 or more units attached, each with separate entrances) ☐3
- Apartment suite ☐4
- Mobile home ☐5
- Other ☐6
  (please specify)_____

b. When was this residence built?

Before 1950	☐1	1986 - 1988	☐4
1950 - 1975	☐2	1989 or after	☐5
1976 - 1985	☐3	Don't know	☐6

c. Is this your principal residence?

Yes ☐1 No ☐2

d. How many years have you lived in this residence? _____ years

e. Do you own or rent this residence?

Rent ☐1 Own ☐2 — IF "OWN" SKIP TO Question 1.f.

IF "RENT":
Are the following included in your rent or maintenance fee?

Heat	Yes ☐1	No ☐2
Hot water	Yes ☐1	No ☐2
Natural gas for fireplace	Yes ☐1	No ☐2

* If you have no fireplace, check here — ☐3

f. Is the basement area of this residence finished?

No basement	☐1	Partly finished	☐3
Unfinished	☐2	Fully finished	☐4

g. What is the total floor area of this residence, including basement and/or unfinished areas, if any?

_____ sq. ft. or _____ sq. metres

h. How much insulation do you have in different parts of this residence? (Please answer in terms of R-factor or inches of fibreglass insulation.) (Please give one answer per row.)

	R12 (3½")	R20 (6")	R28 (8½")	R40+ (12½" or more)	No insulation	Don't know
Walls	☐1	☐2	☐3	☐4	☐5	☐6
Ceiling	☐1	☐2	☐3	☐4	☐5	☐6
Floors	☐1	☐2	☐3	☐4	☐5	☐6
Basement	☐1	☐2	☐3	☐4	☐5	☐6

* If you have no Basement, leave the last row blank.

i. IF THIS RESIDENCE IS AN APARTMENT:
How many floors are there in this building? _____ floors

2. SPACE HEATING

a. Is natural gas or piped propane service available to this residence and to other residences on your street?

- YES, natural gas service is available. ☐1
- YES, piped propane service is available. ☐2
- YES, gas service is available, but I'm not sure which kind. ☐3
- NO, neither natural gas nor piped propane service is available in this neighbourhood. ☐4
- I don't know whether natural gas or piped propane service is available in this neighbourhood. ☐5

b. What is the main fuel used to heat this residence?

- Electricity ☐1
- Natural Gas ☐2
- Piped Propane ☐3
- Bottled Propane ☐4
- Oil ☐5
- Wood ☐6
- Other ☐7
  (please specify) _____

c. Now, please check all other fuels, besides the main one, that are used for at least 10 percent of the heating of this residence. (Check as many as apply.)

- Electricity ☐1
- Natural Gas ☐2
- Piped Propane ☐3
- Bottled Propane ☐4
- Oil ☐5
- Wood ☐6
- Other ☐7
  (please specify) _____

Continued over ...

d. Please check the main method used to heat this residence.

- Central forced air furnace ☐ 1
- Wired-in electric heater (baseboards) ☐ 2
- Hot water heating system ☐ 3
- Radiant cables ☐ 4
- Portable electric heaters ☐ 5
- Wood stove ☐ 6
- Heat pump ☐ 7
- Fireplace ☐ 8
- Other ☐ 9
  (please specify) _____

e. Please check all the space heating methods you use in this residence. (Check as many as apply.)

- Central forced air furnace ☐ 1
- Wired-in electric heater (baseboards) ☐ 2
- Hot water heating system ☐ 3
- Radiant cables ☐ 4
- Portable electric heaters ☐ 5
- Wood stove ☐ 6
- Heat pump ☐ 7
- Fireplace ☐ 8
- Other ☐ 9
  (please specify) _____

f. Have you changed the main fuel used to heat this residence in the past two years?

Yes ☐ 1 No ☐ 2

IF YES:
What main fuel was used to heat this residence before this change?

- Electricity ☐ 1
- Natural Gas ☐ 2
- Piped Propane ☐ 3
- Bottled Propane ☐ 4
- Oil ☐ 5
- Wood ☐ 6
- Other ☐ 7
  (please specify)_____

g. Do you plan to convert this residence to another main heating fuel within the next two years?

Yes ☐ 1 No ☐ 2

IF YES:
What main heating fuel are you planning to convert to?

- Electricity ☐ 1
- Natural Gas ☐ 2
- Piped Propane ☐ 3
- Bottled Propane ☐ 4
- Oil ☐ 5
- Wood ☐ 6
- Other ☐ 7
  (please specify) _____

h. Assuming all fuels were available, what type of main heating fuel would you prefer if you moved to a new home? (Please check only one fuel in the first column).

And which other heating fuels would be acceptable to you? (Please check as many as apply in the second column).

	Preferred	Acceptable
Electricity	☐ 1	☐ 1
Natural Gas	☐ 2	☐ 2
Oil	☐ 3	☐ 3
Propane	☐ 4	☐ 4
Wood	☐ 5	☐ 5
Other	☐ 6	☐ 6
(please specify)_____		
No preference	☐ 7	

i. What are your opinions about the safety of the following fuels for use in the home? (Please give one answer per row.)

	Not safe at all	Not very safe	Reasonably safe	Completely safe
Electricity	☐ 1	☐ 2	☐ 3	☐ 4
Natural Gas	☐ 1	☐ 2	☐ 3	☐ 4
Piped Propane	☐ 1	☐ 2	☐ 3	☐ 4
Bottled Propane	☐ 1	☐ 2	☐ 3	☐ 4
Oil	☐ 1	☐ 2	☐ 3	☐ 4
Wood	☐ 1	☐ 2	☐ 3	☐ 4
Other	☐ 1	☐ 2	☐ 3	☐ 4
(please specify) _____				

j. Please rank how much influence each of the following factors would have in your choice of a new home heating system.

Give a "1" to the factor you feel would be most important.
Give a "2" to the factor which would be next most important.
And so on until you reach "5" for the least important factor.

	Ranking
Fuel price	_____
Dependability of fuel supply	_____
Comfort	_____
Initial cost of equipment	_____
Environmental impact	_____

3. FIREPLACES

(Not including free standing wood stoves)

a. Please indicate the number of fireplaces in this residence.

_____ Fireplace(s)

IF NONE, SKIP TO QUESTION 3.d.

b. Is(are) the fireplace(s) used primarily for:

- Heating ☐ 1
- Atmosphere ☐ 2
- Both ☐ 3
- Do not use ☐ 4

c. How many of the following have been installed in this/ these fireplace(s)?

	Number
Natural gas -insert	_____
-logs only	_____
Electric insert	_____
Propane insert	_____
Wood burning insert	_____

d. If you moved to a new home, what type of fireplace would you prefer?

- Wood ☐ 1
- Natural gas ☐ 2
- Propane ☐ 3
- No preference ☐ 4
- Don't want fireplace ☐ 5

4. WATER HEATING FUEL

a. Please check all the fuels used for heating hot water in this residence. (Check all that apply.)

- Electricity ☐ 1
- Natural Gas ☐ 2
- Piped Propane ☐ 3
- Bottled Propane ☐ 4
- Solar ☐ 5
- Oil ☐ 6
- Other ☐ 7
  (please specify)_____

b. Do you plan to convert this residence to a different hot water heating fuel in the next two years?

Yes ☐1 No ☐2

IF YES:
What water heating fuel are you planning to convert to?

- Electricity ☐1
- Natural Gas ☐2
- Piped Propane ☐3
- Bottled Propane ☐4
- Solar ☐5
- Other ☐6
  (please specify) _____

5. LIGHTING

a. Please indicate whether you have each of the following types of light bulb, and how many you have of each type, at this residence.

	I have this type	Number
Outdoor light bulbs	☐1	____
Indoor light bulbs, in all rooms, including lamps:		
Incandescent	☐2	____
Fluorescent	☐3	____
Compact fluorescent	☐4	____
Other	☐5	____

6. APPLIANCES

a. Please indicate the number of each of the following appliances in use in this residence. (Include only appliances for which you pay the entire energy bill.) For each appliance used, please indicate its approximate age. If two or more of the same appliance are used, please give the age of both (or all).

	Number in Use	Age of appliance (in years)
Cooking		
Electric range	____	_____
Natural gas range	____	_____
Electric cook top	____	_____
Natural gas cook top	____	_____
Separate electric oven	____	_____
Separate natural gas oven	____	_____
Microwave oven	____	_____
Propane barbecue (for outdoors)	____	_____
Natural gas barbecue (for outdoors)	____	_____
Food Storage		
Refrigerator, manual defrost	____	_____
Refrigerator, automatic defrost	____	_____
Separate chest freezer	____	_____
Separate upright freezer	____	_____
Laundry		
Clothes washer	____	_____
Electric clothes dryer	____	_____
Natural gas clothes dryer	____	_____
Air Conditioning		
Electrical central system	____	_____
Natural gas absorption system	____	_____
Electric window unit	____	_____
Humidifier (in regular use)	____	_____
Heat pump	____	_____
Others		
Hot water heater	____	_____
VCR	____	_____
Dishwasher	____	_____
Waterbed heater	____	_____
Electric sauna	____	_____
Electric car block heater	____	_____

	Number in Use	Age of appliance (in years)
Others (cont'd)		
Electric car interior heater	____	_____
Natural gas patio heater	____	_____
Personal computer	____	_____
Fax machine	____	_____
Television	____	_____
Compact disc player	____	_____
Electric lawnmower	____	_____
Gasoline lawnmower	____	_____

7. POOLS AND HOT TUBS

a. Do you have a swimming pool at this residence?

Yes, indoor ☐1 No ☐3
Yes, outdoor ☐2

IF YES:
Please indicate the type of heater used.

Not heated ☐1 Solar ☐5
Electric ☐2 Other (please specify) ☐6
Natural Gas ☐3 _____
Propane ☐4 Don't know ☐7

b. Do you have a hot tub, whirlpool or jacuzzi at this residence?

Yes, indoor ☐1 Yes, both ☐3
Yes, outdoor ☐2 No ☐4

IF YES:
Please indicate the type of heater used.

Electric ☐1 Solar ☐4
Natural Gas ☐2 Other (please specify) ☐5
Propane ☐3 _____

Do you cover your hot tub when not in use?

Yes ☐1 No ☐2

8. HOT WATER CONSUMPTION

a. Please indicate the total number of each of the following used in this residence:

Number of dishwasher loads per week ____
Number of loads of laundry per week (any temperature) ____
Number of baths per week ____
Number of showers per week ____

9. CONSERVATION

a. Please indicate whether you always, usually, occasionally or never take the following actions specifically to conserve energy. (Check one box per row.)

	Always	Usually	Occa-sionally	Never	Don't know
Turn off the lights in rooms not in use	☐1	☐2	☐3	☐4	☐5
Turn back the thermostat or use a setback thermostat at bedtime	☐1	☐2	☐3	☐4	☐5
Turn back the thermostat or use a setback thermostat when no one is home	☐1	☐2	☐3	☐4	☐5
Use less or no heating in unused rooms	☐1	☐2	☐3	☐4	☐5

9.

a. (cont'd)

	Always	Usually	Occasionally	Never	Don't know
Wash and rinse clothes in cold water	☐1	☐2	☐3	☐4	☐5
Wash clothes in warm water with a cold water rinse	☐1	☐2	☐3	☐4	☐5
Wash only full loads of clothes	☐1	☐2	☐3	☐4	☐5
Wash only full loads of dishes in the dishwasher	☐1	☐2	☐3	☐4	☐5
Do not use the dry cycle of the dishwasher	☐1	☐2	☐3	☐4	☐5
Service heating system regularly	☐1	☐2	☐3	☐4	☐5

b. Have you taken or are you willing to take any of the following actions at this residence specifically to conserve energy? (Check one box per row.)

	Home already had this when I moved in	Have done	Planning to do	Willing to do	Not willing to do	Don't know
Improve home insulation in the walls or attic	☐1	☐2	☐3	☐4	☐5	☐6
Install weather-stripping or caulking	☐1	☐2	☐3	☐4	☐5	☐6
Install double-glazed windows	☐1	☐2	☐3	☐4	☐5	☐6
Install triple-glazed windows	☐1	☐2	☐3	☐4	☐5	☐6
Install storm windows	☐1	☐2	☐3	☐4	☐5	☐6
Purchase energy-efficient appliances	☐1	☐2	☐3	☐4	☐5	☐6
Install an insulated steel door and/or an aluminum storm door	☐1	☐2	☐3	☐4	☐5	☐6
Use a low-flow shower head or flow restrictor	☐1	☐2	☐3	☐4	☐5	☐6
Install energy-efficient, or lower-wattage lighting	☐1	☐2	☐3	☐4	☐5	☐6
Install time-controlled thermostat	☐1	☐2	☐3	☐4	☐5	☐6
Have a home energy audit	☐1	☐2	☐3	☐4	☐5	☐6
Participate in energy-efficient appliance rebate program	☐1	☐2	☐3	☐4	☐5	☐6
Install a hot water heater blanket	☐1	☐2	☐3	☐4	☐5	☐6
Install glass fireplace doors	☐1	☐2	☐3	☐4	☐5	☐6

c. What is your main reason for taking action to conserve energy?

- Save money ☐1
- Help maintain the environment ☐2
- Benefit B.C. generally ☐3
- It is a sensible thing to do ☐4
- Benefit future generations ☐5
- I take no action to conserve energy ☐6
- Other ☐7
  (please specify)_____

d. How much would you be willing to pay for an improvement to your home heating system that would save you $100 per year on your fuel bill?

$0	☐01	$200	☐04	$500	☐07	$1500	☐10
$50	☐02	$300	☐05	$750	☐08		
$100	☐03	$400	☐06	$1000	☐09		

10. ABOUT YOU

a. What is your age? _____ years

b. What is your sex?

Male ☐1 Female ☐2

c. Thinking about your own lifestyle and the way you use electricity, how would you rate yourself on a scale of 1 to 10, where a rating of "1" means you do not pay much attention to the amount of electricity you use, up to "10" which means you pay very close attention to trying to limit the amount of electricity you use?

Rating: _____

d. Please indicate how much you agree or disagree with each of the following items:

	Disagree Strongly				Agree Strongly
I try new products before many of my friends	1	2	3	4	5
I expect to live in my current home for many years	1	2	3	4	5

e. Please indicate the number of people living in your household by sex and age.

Age	0 - 5	6 - 18	19 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65+
Male								
Female								

f. Your total household income before taxes for 1989 was:

Under $10,000	☐1	$40,000 to $49,999	☐5
$10,000 to $19,999	☐2	$50,000 to $59,999	☐6
$20,000 to $29,999	☐3	$60,000 to $79,999	☐7
$30,000 to $39,999	☐4	$80,000 and over	☐8

g. Which is the highest level of education achieved by the primary wage earner in the household?

- Less than grade 12 ☐1
- Completed high school ☐2
- Some post-secondary school training (college or technical) ☐3
- Some university ☐4
- University graduate ☐5

Thank you very much for taking the time to complete this questionnaire.